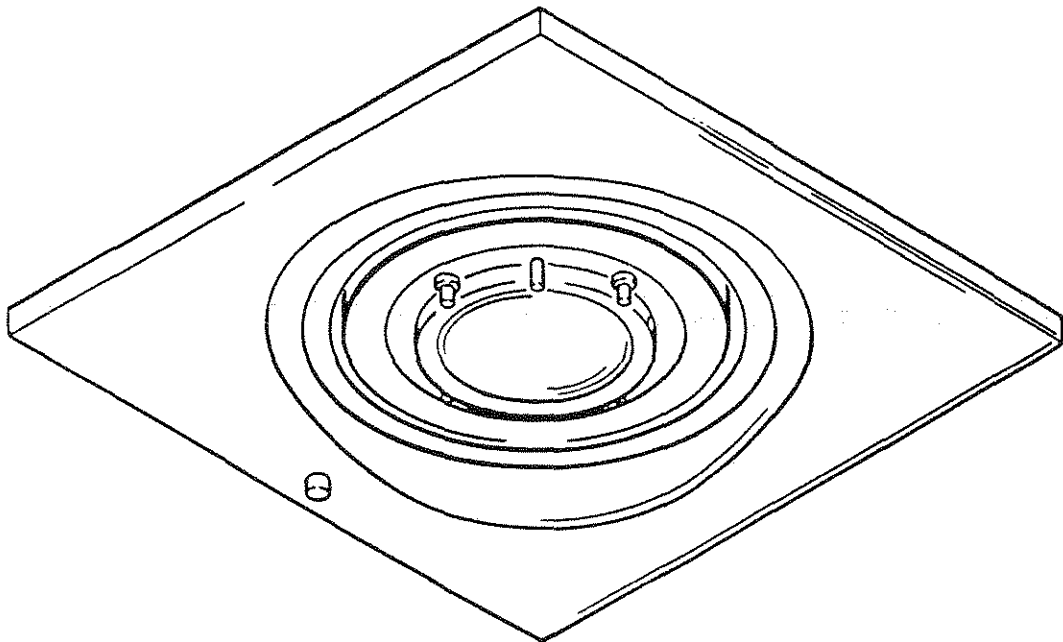




SKYTRON

HA30AR MINI ARGOS REMOTE CONTROLLED SURGICAL LIGHT



INSTALLATION INSTRUCTIONS

WARNING

Pay close attention to wiring diagrams and wire color coding. Incorrect wiring may result in High Voltage (120VAC) being supplied to Low Voltage circuits. This WILL DAMAGE internal circuitry and components.

INSTALLATION CLEARANCES

To prevent damage to the light fixture the following minimum clearances must be maintained:

1. Centers of adjacent (two or more) fixtures: 3 feet
2. Top of fixture and an overhead building member: 5 inches.
3. Fixture center to side wall: 1-1/2 feet.

WARNING

Risk of FIRE. DO NOT install insulation within 3 inches of fixture sides nor above fixture in such a manner to entrap heat.

INSTALLATION INSTRUCTIONS

1. Loosen cover thumbscrew, open cover and remove three screws securing light assembly to housing. See figure 1.

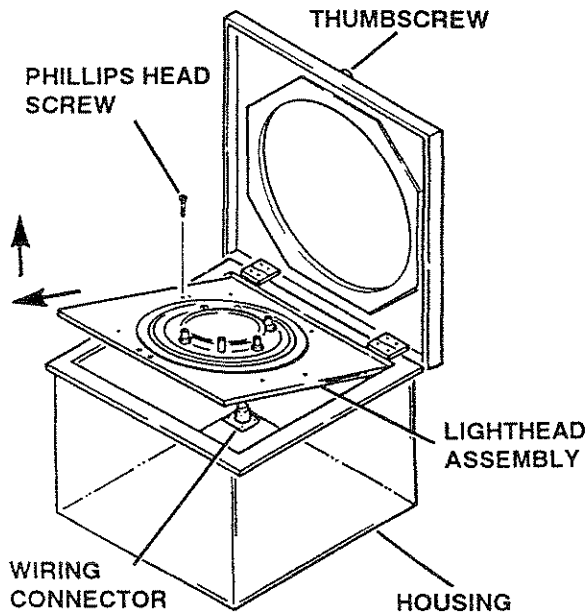


Figure 1.

2. Lift lighthead up and towards you. Remove assembly from housing. Disconnect wiring connector from housing before removing lighthead assembly completely.

3. After the connector is disconnected, set the lighthead aside on edge to avoid damaging the circuit boards or front face.

IMPORTANT

Remove all protective shipping material from lighthead assembly and verify that all circuit boards are in place.

4. Check mounting structure details (on back page) and install housing onto threaded rod.

NOTE

- Threaded rod must not extend more than 1 inch inside housing to prevent interference with light assembly movement.
- Up to four (4) lightheads can be operated by a single control box.

5. If installation requires more than one lighthead, connect color coded wires from each lighthead to appropriate colored wires of control box (maximum 4 lightheads per control box). See figure 2.

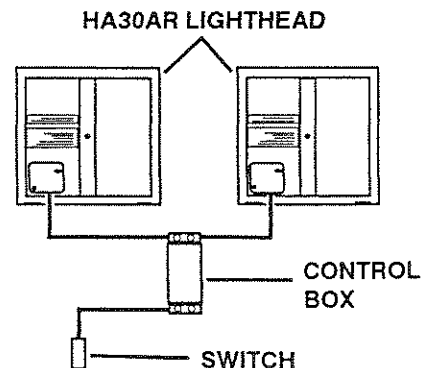


Figure 2. Multiple Lighthead Wiring

6. Connect the six (6) wires from the lighthead housing junction box (through conduit) to control box junction box. Observe wire colors carefully and make all wire connections using wire nuts. See figure 3.

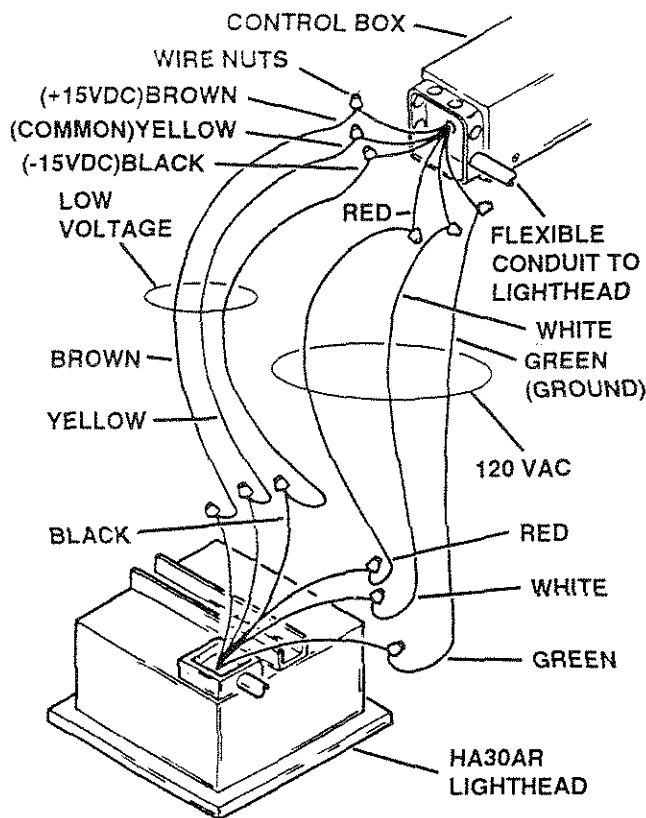


Figure 3. Lighthouse to Control Box Wiring

IMPORTANT

The bulb transformer has been wired for use with a SKYTRON Wall Dimmer Control. If a standard DPST Wall Switch is used, the bulb will have 22-23 volts applied to it and will burn out prematurely.

7. If SKYTRON Wall Dimmer Control is not being used, the lighthouse bulb transformer output tap must be changed. Unsolder the wire that is attached to the SR terminal and attach it to the 120V terminal. See figure 4.

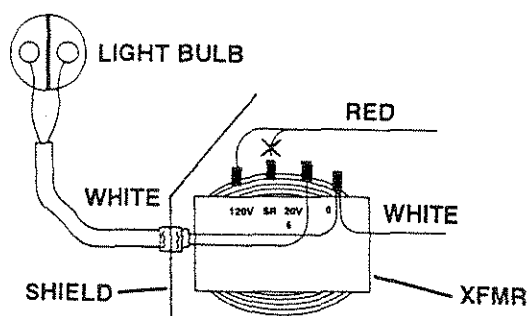


Figure 4. Transformer Wiring Without Intensity Control

8. Install wiring connector, reinstall the lighthouse assembly in housing, and secure with three screws.

9. Observe wire color code and connect wires from wall switch to control box using wire nuts. See figure 5.

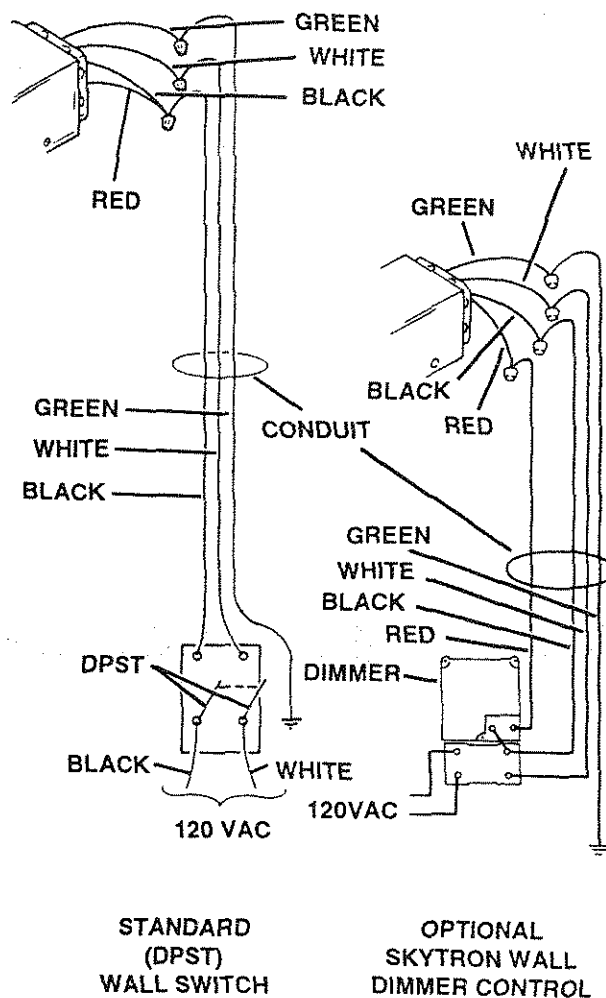


Figure 5. Control Box to Wall Switch Wiring

CAUTION

Use 20 AWG wire MINIMUM. Make all wire connections with wire nuts.

10. Turn main power ON and test operation of light.

IMPORTANT

Fixture has a thermal protection device. Blinking light may indicate heat build-up due to improper installation clearances.

Lighthouse Housing Connector

NOTE

Depending on length of 1/2 inch threaded rod and finish ceiling construction, some fixture movement may be noticed during operation. If so, shims may need to be added between finished ceiling and housing to prevent side movement of the fixture.

HIGH VOLTAGE

Pins 2 & 3 = 120 VAC

LOW VOLTAGE

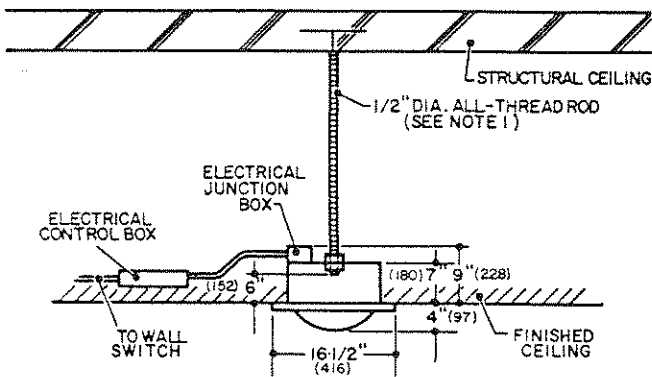
Pins 4 & 5 = +15 VDC

Pins 5 & 6 = -15 VDC

Pin 1 = Ground

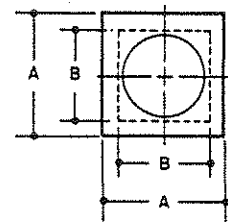
Pin 5 = Common

Pin 7 = Not Used



NOTES:

- 1/2" diameter support rod centered in fixture opening for total support of light. All labor and materials for fabrication, 1/2" nuts and washers (2 each required) for fixture attachment, contractor supplied.
 - All wiring, conduit, wall switches and other electrical materials as well as installation labor for the SKYTRON light fixture to be provided by electrical contractor. All installations of SKYTRON lighting fixtures should be under the direct supervision of a SKYTRON service representative.
 - All wiring to be in accordance with local codes. 120 VAC isolated power supply to light fixture to be via DPST "On-Off" wall switch, not SKYTRON supplied.
- Optional SKYTRON wall mounted intensity control (to control up to four lights) requires a single, 2" x 4" switch box with a minimum depth of 2 3/4" for switch and wire clearance. Use Appleton-335, Bowers-53 3/4, Raco-565, Steel City-CW- 3/4 or equivalent.

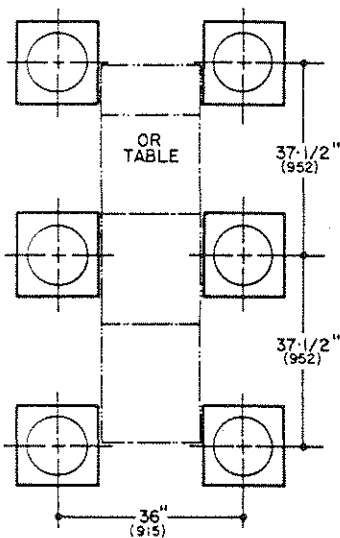


A = 16 1/2"
B = 14"

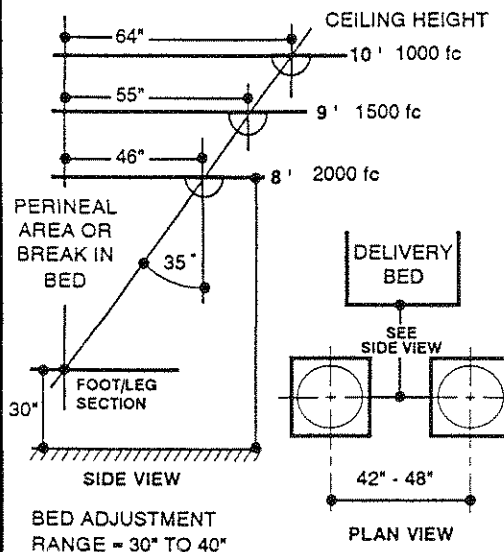
SIDE VIEW

MOUNTING STRUCTURE AND WIRING DETAIL

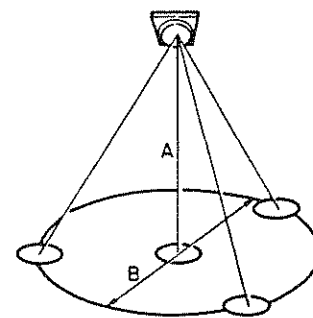
PLAN VIEW



OR APPLICATION



BIRTHING ROOM APPLICATION



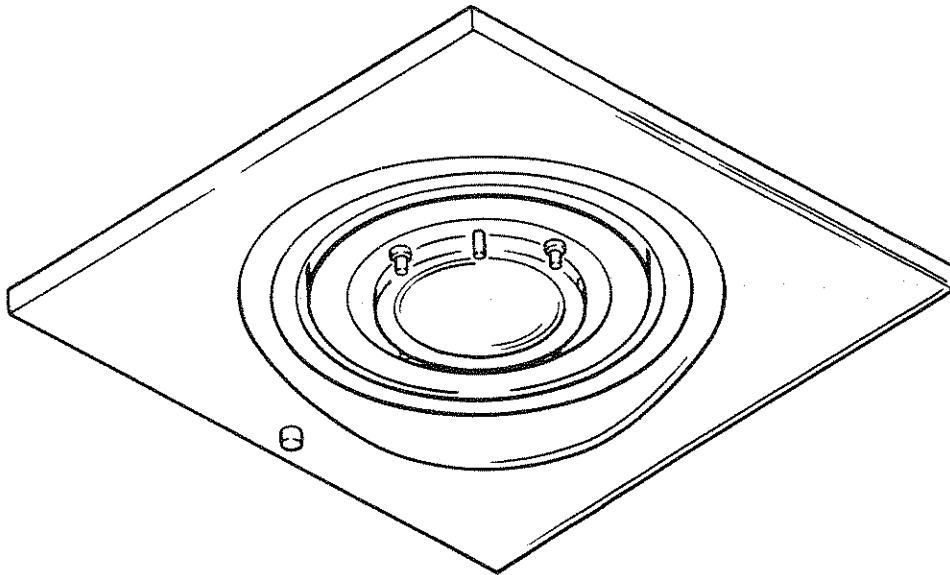
A	B	INTENSITY
60"	120"	2500 fc
78"	156"	2000 fc

A = Working Height
B = Diameter of Coverage



SKYTRON

HA30AR MINI ARGOS REMOTE CONTROLLED SURGICAL LIGHT



OPERATION, MAINTENANCE AND PARTS MANUAL

TABLE OF CONTENTS

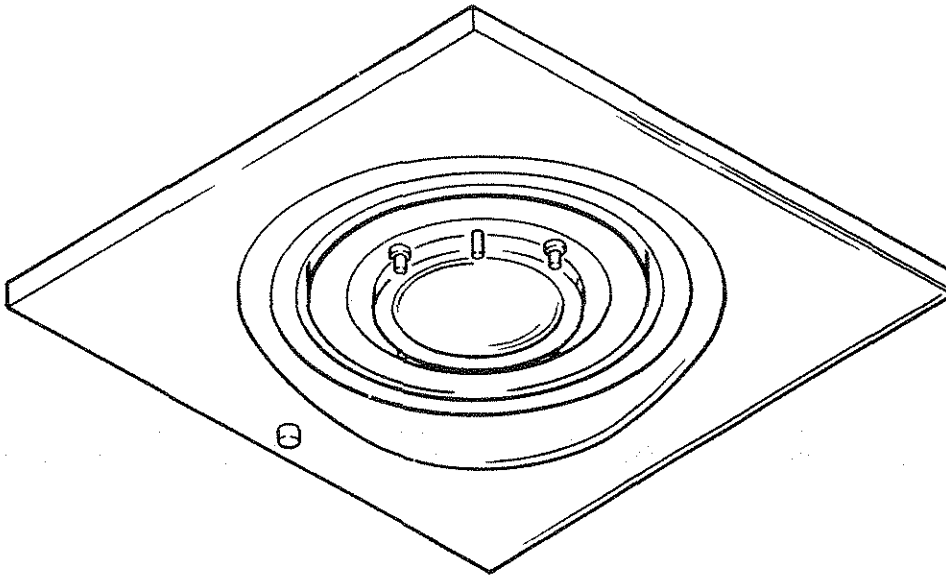
INTRODUCTION	2
SECTION I - OPERATION	3
Optional Wall Mounted Control Switch	3
Positioning Wand	3
Positioning Wand Operation	3
SECTION II - MAINTENANCE	4
Positioning Wand Batteries	4
Positioning Wand Strobe Bulb	4
Halogen Bulb Replacement	4
Cleaning	5
Adjustment	5
Testing	5
Service	5
SECTION III - REPLACEMENT PARTS	6
3-1. Light Fixture and Control Box Assembly	6
3-2. Positioning Wand and Optional Wall Control	10

Although current at the time of publication, SKYTRON'S policy of continuous development makes this manual subject to change without notice.

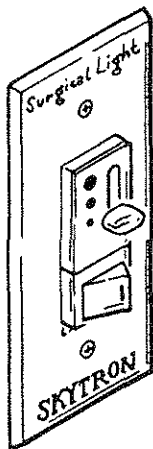
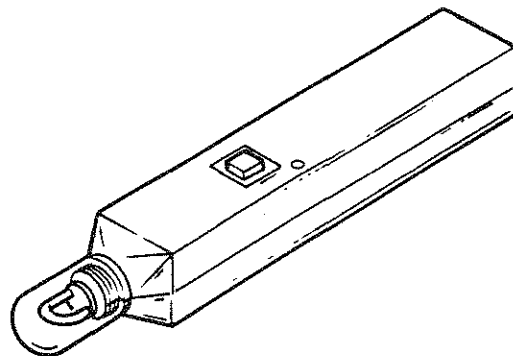
INTRODUCTION

The HA30AR, Mini Argos, Surgical Lighting System from SKYTRON consists of a lighthead with optical sensors and computer circuitry for lighthead positioning. An optional wall mounted dimmer control/on-off switch controls the light intensity. The lighthead is positioned by means of a hand-held, wireless remote control unit (positioning wand). When activated, the positioning wand

emits a bright high frequency strobe light. Photoelectric elements located in the lighthead sense the signal emitted by the wand and create input signals to the internal computer circuitry. The computer circuitry simultaneously activates the two positioning motors until the light beam is focused directly on the positioning wand.



HA30AR

WALL CONTROL
(OPTIONAL)POSITIONING
WAND

SECTION I - OPERATION

OPTIONAL WALL MOUNTED CONTROL SWITCH

The optional wall mounted dimmer control/on-off switch supplies direct power to the Mini Argos positioning circuit and regulates input to the bulb circuit. See Figure 1-1. Turn power "ON" with the main power switch. Adjust the light intensity with the intensity control lever.

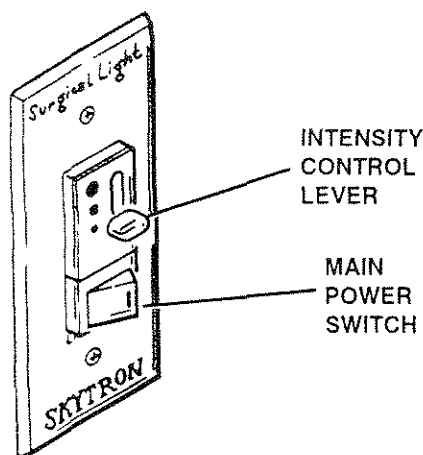


Figure 1-1. Optional Wall Control Switch

When light is no longer needed, lower the intensity control and turn power "OFF" with main power switch.

NOTE

Lowering the light intensity before turning main switch "ON" or "OFF" prolongs halogen bulb life by allowing a gradual warm-up when switch is again turned "ON".

POSITIONING WAND

The positioning wand is the hand-held remote control device that activates the lighthead positioning function. See Figure 1-2.

Before use in a surgical area, cover the wand with a sterile drape.

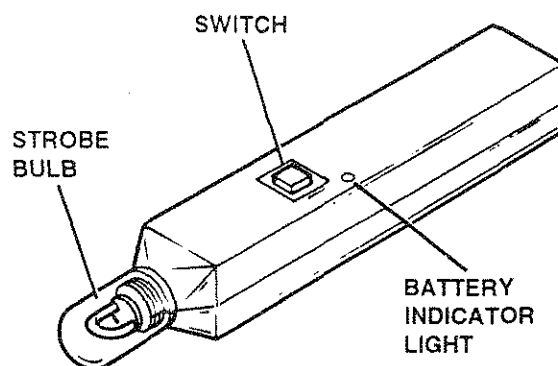


Figure 1-2. Positioning Wand

POSITIONING WAND OPERATION

To initially position the lighthead, turn the main power switch "ON" and hold the strobe end of the positioning wand in the light beam path. Press the momentary switch button on the side of the wand. When the lighthead begins to move, hold the switch button down, move the wand to the desired position, and release the switch. With the positioning wand in its sterile drape, the light can be repositioned precisely as desired during surgery. Hold the strobe end of the control wand in the light path, press the switch button, move the wand to the new position, and release the switch.

A Battery Indicator Light, located on the wand, will go on when button is pushed. When the button is pushed and the red light gets dimmer or goes out, the batteries need to be changed.

SECTION II - MAINTENANCE

POSITIONING WAND BATTERIES

The positioning wand is powered by two C-size alkaline batteries. Erratic movement of the lighthead or failure of the lighthead to follow the wand correctly are symptoms of low battery voltage. To replace the batteries, use the following procedure:

1. Slide the battery cover toward the end of the main case and remove it. See Figure 2-1.
2. Remove old batteries.
3. Install two new C-size alkaline batteries. Battery positioning (polarity) is engraved in control wand case.
4. Inspect the battery contact on the end cover for corrosion, looseness, or bent contact.
5. Line up sides of the battery cover with slots in main case and replace end cover.

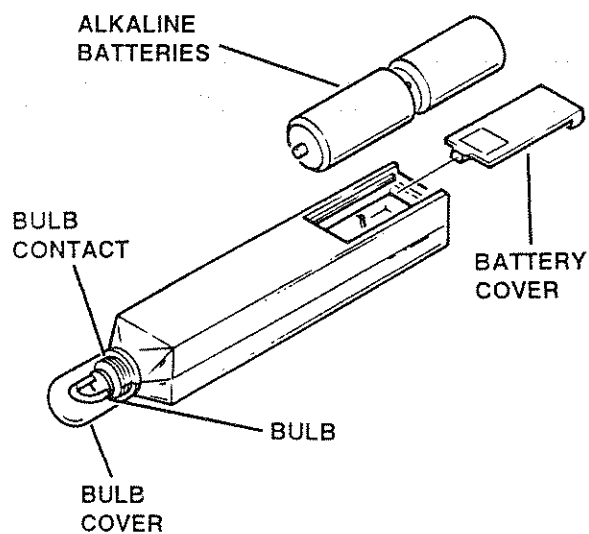


Figure 2-1. Positioning Wand

POSITIONING WAND STROBE BULB

To replace the strobe bulb refer to figure 2-1 and use the following procedure:

1. Unscrew and remove the bulb cover.
2. Hold the bulb by the base and pull straight out.

3. Align the three prongs on the new bulb with their corresponding contact holes in the wand (pins are arranged so bulb will fit properly in only one position) and push new bulb into place.

4. Replace bulb cover.

HALOGEN BULB REPLACEMENT

To replace the halogen bulb, use the following procedure:

1. Loosen the thumbscrew securing the diffuser cover and lower the cover. See Figure 2-2.

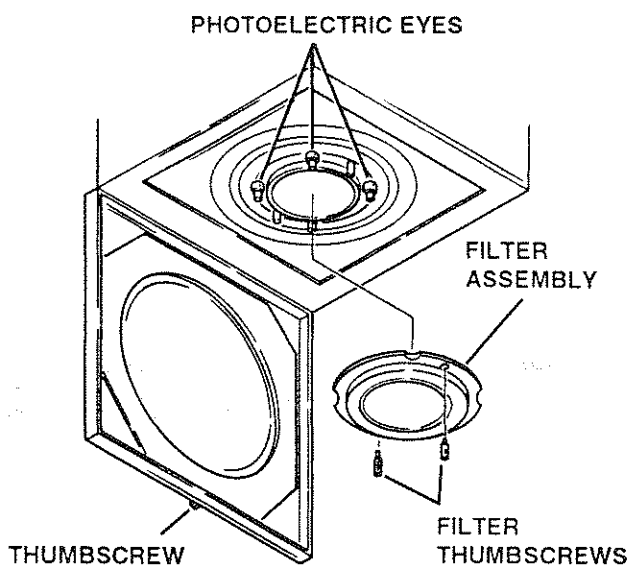


Figure 2-2.

2. Using caution not to move the photoelectric eyes, remove the two thumbscrews securing the filter assembly and remove the filter assembly.

3. Make sure the electrical power to the fixture is off and the bulb is cool. Using caution not to touch the reflector surface, hold the bulb by the base and pull out. See Figure 2-3. Slightly working the bulb back and forth may aid in removal.

NOTE

The Halogen bulbs are sensitive to body oils. DO NOT handle glass surface of new bulb, as body oil from fingers can create a "hot spot" and may cause the bulb to burn out prematurely.

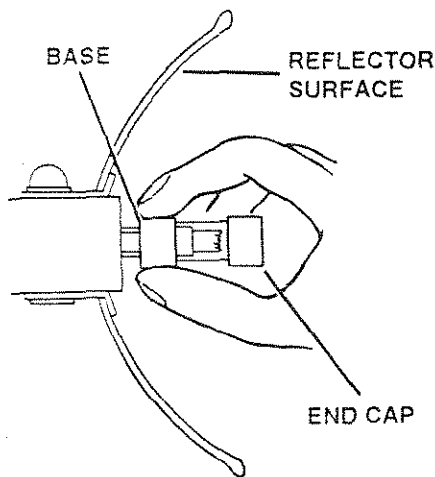


Figure 2-3.

4. Holding the bulb by the base, plug it directly into the socket. **DO NOT** touch the glass portion of the bulb or the reflector surface with your fingers. This can best be done by using a clean cloth around the base of the bulb when installing. Be sure bulb base is properly seated in the connector to insure proper focus alignment.

CLEANING

Lighthouse exterior - Should be wiped down periodically or between cases with a mild cleaning agent which will not adversely affect the painted or plastic surfaces.

Lighthouse interior - Should be cleaned once a year or as applicable.

Filter - Should be removed periodically to remove dust and lint. Dust off with a dry cloth or wash and air dry as desired.

ADJUSTMENT

As part of a regular preventive maintenance program, all positioning axes should be checked for proper operation and adjusted if necessary. During scheduled cleaning of the lighthouse interior, all moving parts should be lubricated.

TESTING

All HA30AR fixtures are wired from the factory to be used with the SKYTRON wall control. If a standard DPST wall switch is used, the bulb may

have 22-23 volts applied to it and may burn out prematurely. Test the voltage applied to the bulb. If a reading of over 20 volts is received, the bulb transformer output tap must be changed. Unsolder the wire that is attached to the SR terminal and attach it to the 120V terminal. See Figure 2-4.

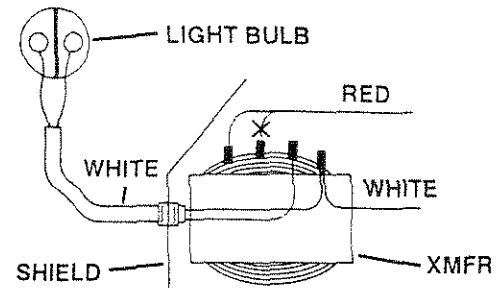


Figure 2-4.

The electrical operation of the wall switch and control box can be tested at the connector inside the fixture housing. Remove the lighthouse assembly, turn the main power ON, place the intensity control at maximum intensity (if applicable) and test for proper readings.

LIGHTHEAD HOUSING CONNECTOR

HIGH VOLTAGE		
Pins 2 & 3	=	120 VAC
LOW VOLTAGE		
Pins 4 & 5	=	+15 VDC
Pins 5 & 6	=	-15 VDC
Pin 1	=	Ground

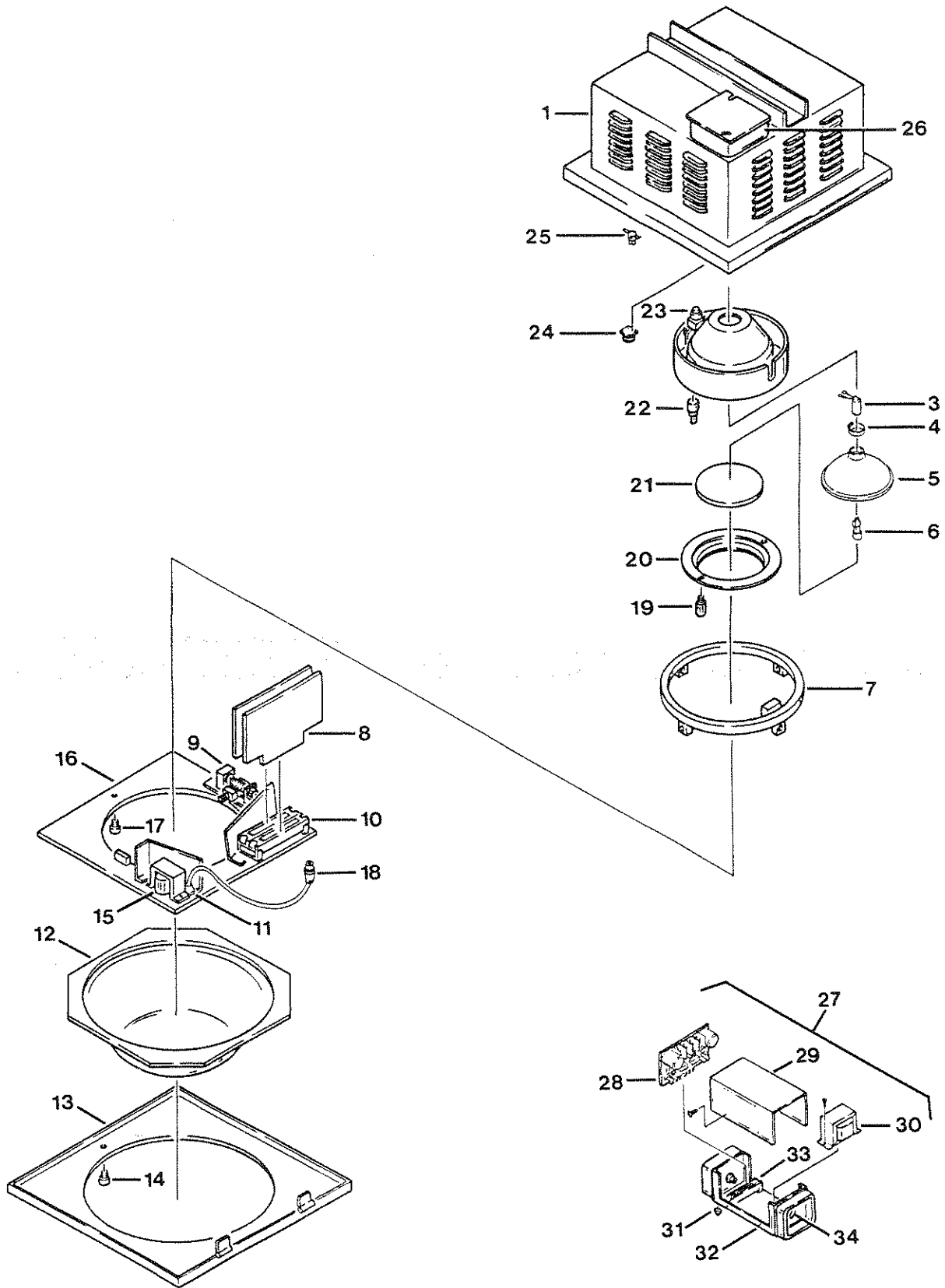
SERVICE

The Mini Argos Lighthouse has many sensitive components that should not be worked on or adjusted by untrained maintenance personnel. Preventive maintenance performed by SKYTRON factory trained service representatives, using authorized parts and service techniques, will assure the extended and reliable performance of your Mini Argos Surgical Lights.

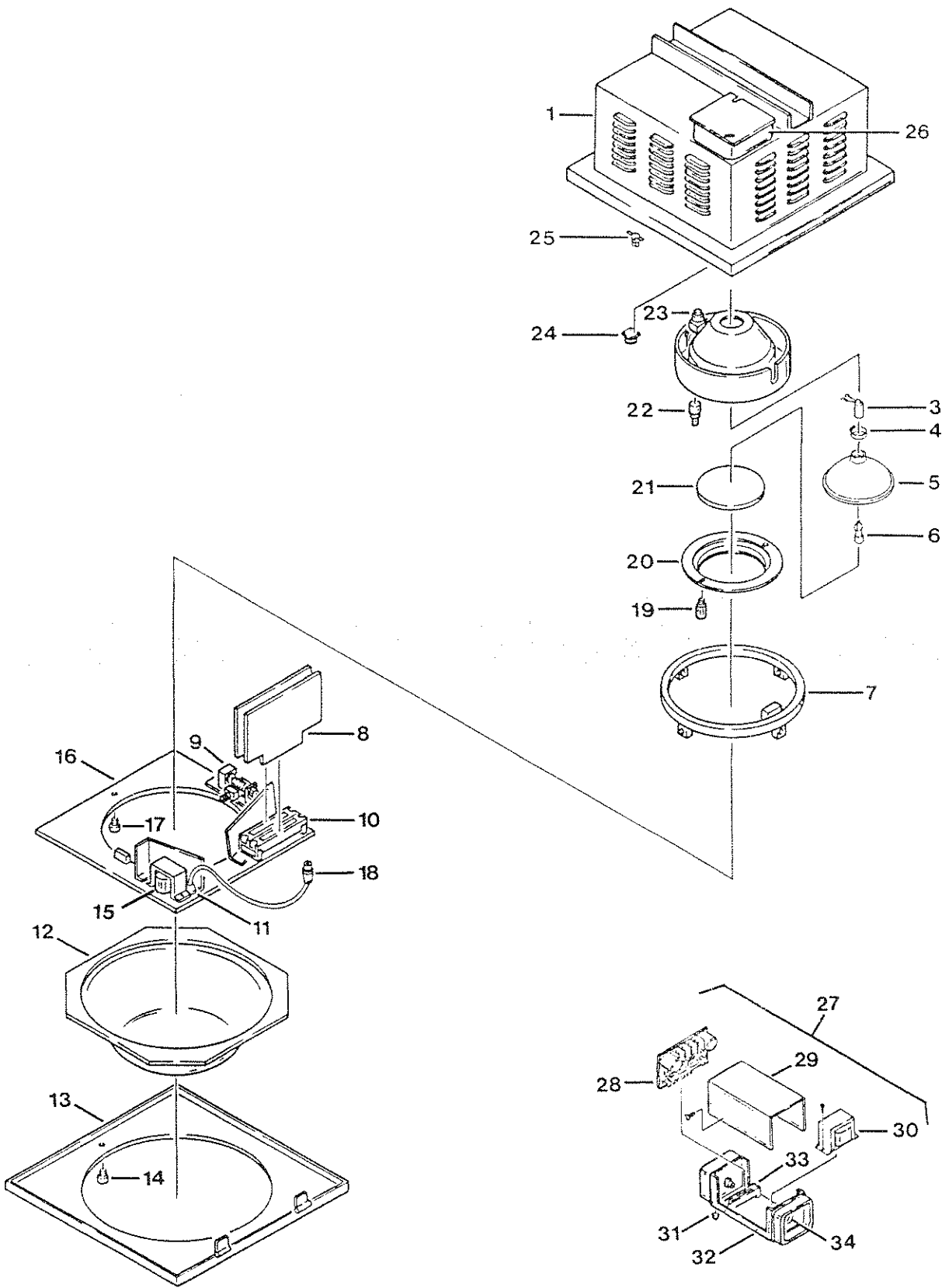
For factory service or preventive maintenance contracts on SKYTRON Mini Argos lighting systems, contact your nearest SKYTRON dealer or write to:

SKYTRON
5000 36th Street S.E.
Grand Rapids, MI 49512
Ph: (616) 957-0500

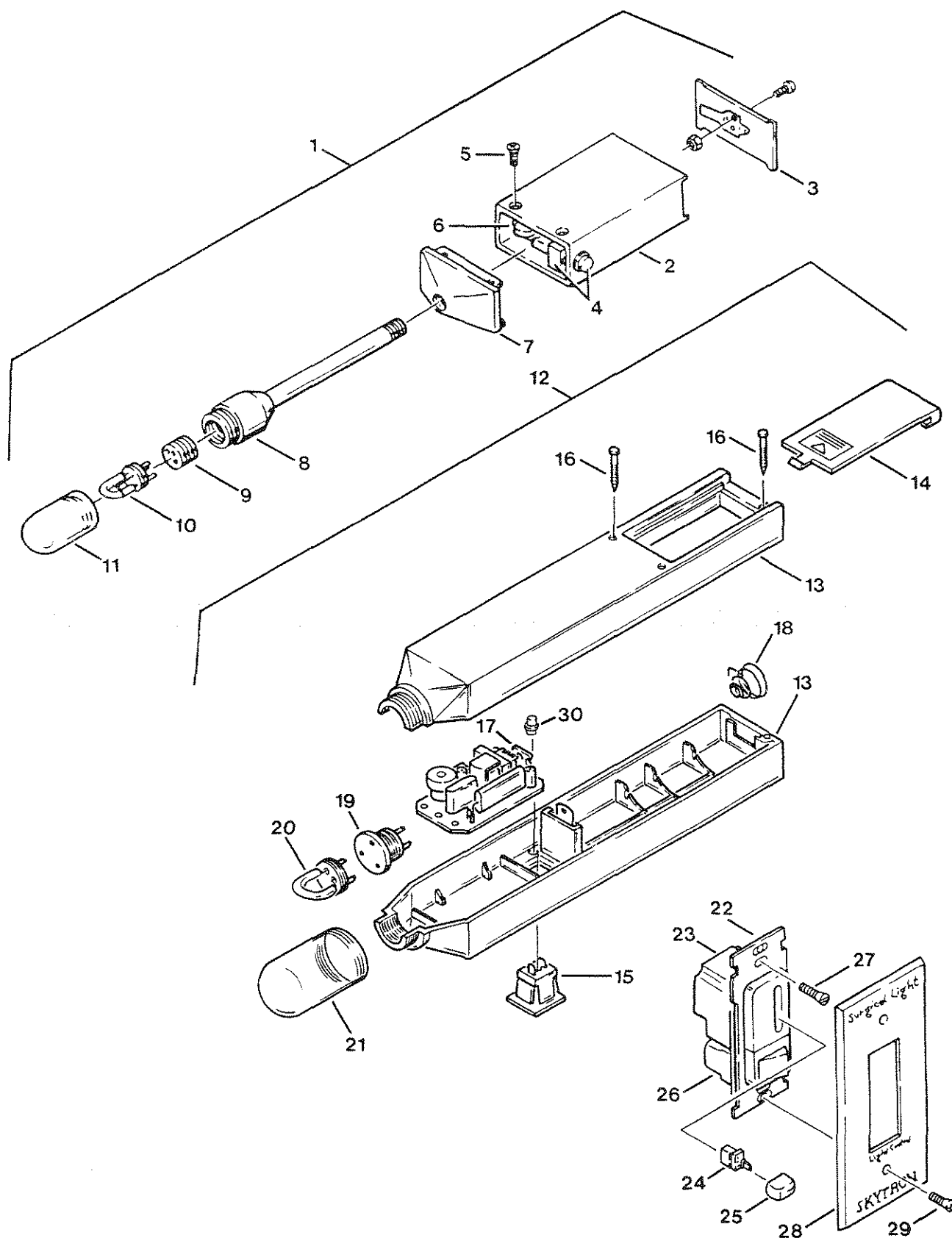
SECTION III - REPLACEMENT PARTS
3-1. LIGHT FIXTURE AND CONTROL BOX ASSEMBLY



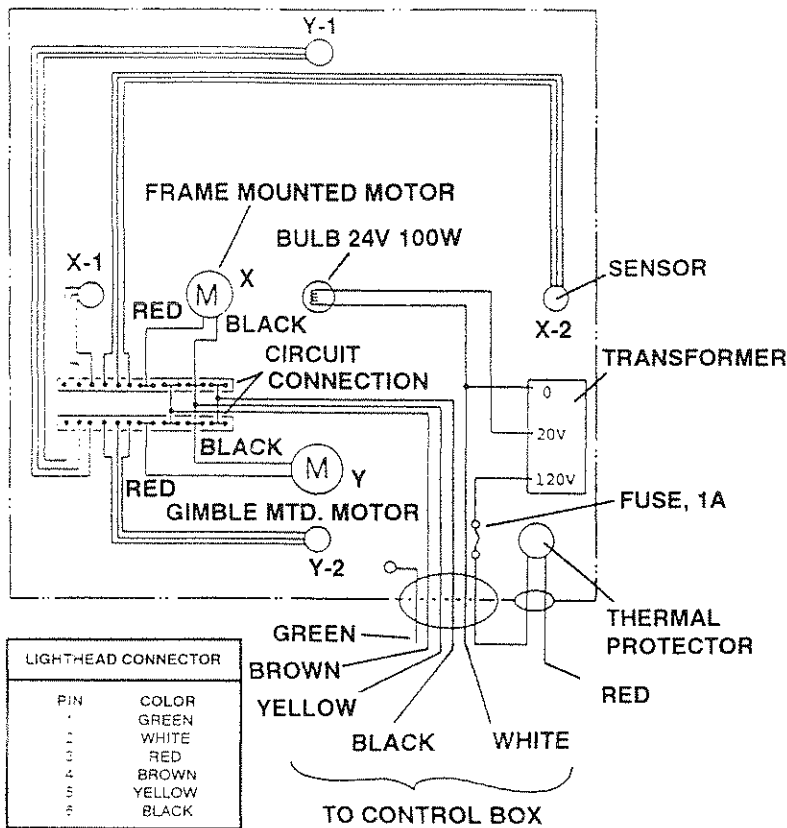
Item	Part No.	Description	Qty.
1	B5-011-30	ENCLOSURE, beige	1
	B5-011-30-C	ENCLOSURE, white	1
2	B5-011-31	HOLDER, bulb and reflector, S.N. D0790E-1847 & P	1
	B5-011-31-1	HOLDER, bulb and reflector, S.N. D0790E-1848 & L	1
3	B1-010-26	SOCKET, Halogen bulb, S.N. D0790E-1847 & P	1
	B1-010-61	SOCKET, Halogen bulb, S.N. D0790E-1848 & L	1
4	B1-010-62	CLAMP, Halogen bulb	1
5	B1-010-59	REFLECTOR, Halogen bulb	1
6	B5-011-32	HALOGEN BULB, 24V, 100W	1
7	B5-011-33	GIMBAL RING	1
8	B5-011-34	CIRCUIT BOARD, motor	2
9	B5-011-35	MOTOR AND GEAR ASSEMBLY, (X-axis), S.N. DO988E-311 & P	1
	B5-011-56	• POSITIONING MOTOR, S.N. DO988E-311 & P	1
-	B5-011-64	MOTOR AND GEAR ASSEMBLY, (X-axis), S.N. DO988E-312 & L	1
	B5-011-56-1	• POSITIONING MOTOR AND U-JOINT, S.N. DO988E-312 & L	1
10	B5-010-24	RECEPTACLE, female, circuit board	2
11	B1-010-01	FUSEHOLDER	1
	A9-010-25	• FUSE, 3AG,3A	A/R
	B5-011-82	• FUSE, 1A, slow blow	A/R
12	B5-011-46	DIFFUSER	1
13	B5-011-37	FRONT COVER, enclosure, beige	1
	B5-011-37-C	FRONT COVER, enclosure, white	1
14	B5-011-38	THUMBSCREW	1
15	B5-011-41	TRANSFORMER	1
16	B5-011-40	MOUNTING PLATE, beige	1
	B5-011-40-C	MOUNTING PLATE, white	1
17	B5-011-39	SCREW	3
18	B5-011-47	CONNECTOR, 5 pin, female	A/R
	B5-011-47-1	CONNECTOR, 6 pin, female	A/R
	B5-011-47-2	CONNECTOR, 7 pin, female	A/R
19	B5-011-42	THUMBSCREW	2
20	B5-011-43	MOUNT, filter	1
21	B5-011-44	FILTER	1
22	B5-010-28-1	ELECTRIC EYE ASSEMBLY	4
23	B5-011-45	MOTOR AND GEAR ASSEMBLY, (Y-axis), S.N. DO988E-311 & P	1
	B5-011-56	• POSITIONING MOTOR, S.N. DO988E-311 & P	1
-	B5-011-67	MOTOR AND GEAR ASSEMBLY, (Y-axis), S.N. DO988E-312 & L	1
	B5-011-56-1	• POSITIONING MOTOR AND U-JOINT, S.N. DO988E-312 & L	1
24	B5-011-36	CONNECTOR, 5 pin, male	A/R
	B5-011-36-1	CONNECTOR, 6 pin, male	A/R
	B5-011-36-2	CONNECTOR, 7 pin, male	A/R
25	B5-011-59	THERMAL PROTECTION DEVICE	1
26	B5-011-58	JUNCTION BOX	1



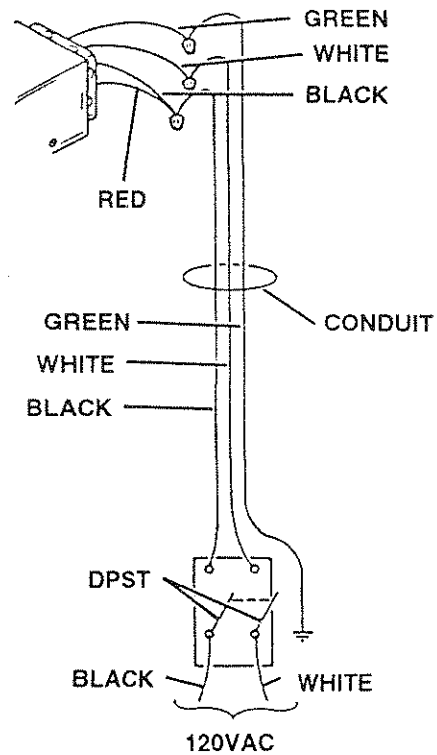
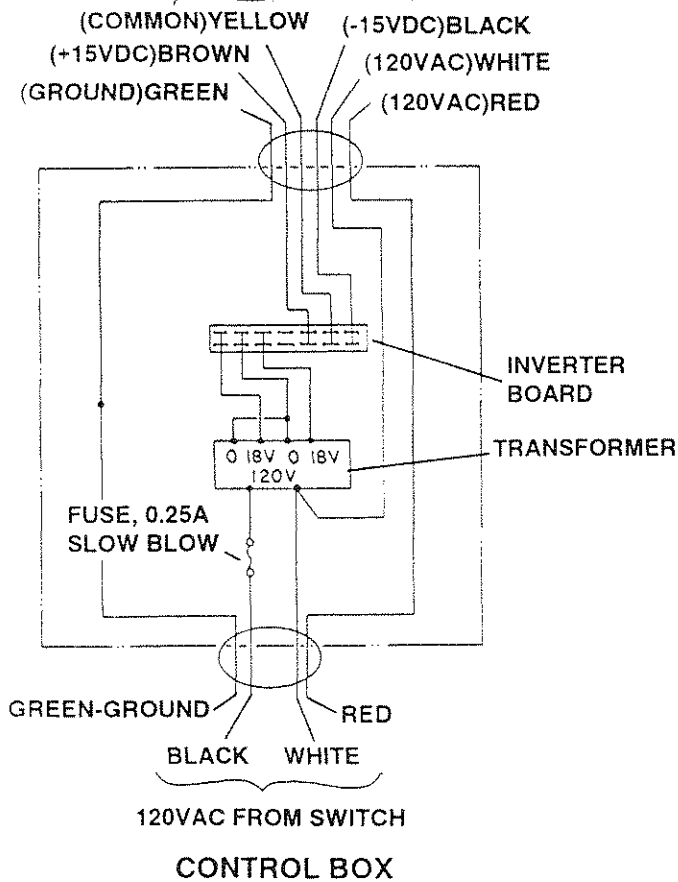
Item	Part No.	Description	Qty.
27	B5-011-48	CONTROL BOX ASSEMBLY, motor power	1
28	B5-011-49	• CIRCUIT BOARD, power	1
29	B5-011-50	• ENCLOSURE COVER	1
30	B5-010-33-1	• TRANSFORMER, 18V, mobility	1
31	B5-011-53	• FOOT, rubber	4
32	B5-011-54	• ENCLOSURE BASE	1
33	B5-010-24	• RECEPTACLE, female, circuit board	1
34	B1-010-01	• FUSEHOLDER	1
	A9-010-31	• FUSE, 0.5A.....	A/R
	B5-011-69	• FUSE, 0.25A, slow blow	A/R



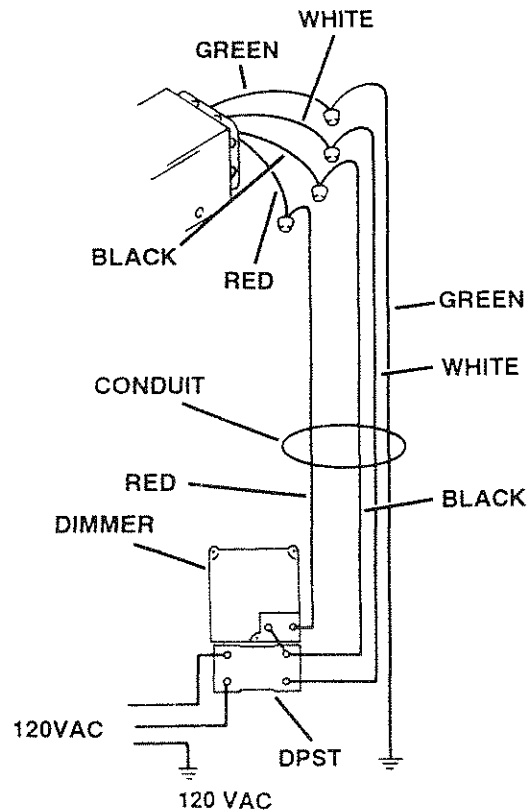
Item	Part No.	Description	Qty.
1	B5-010-01	ARGOS PROBE	
2	B5-010-12	• MAIN BATTERY CASE	1
3	B5-010-15	• BATTERY CASE BACK COVER	1
4	B5-010-08	• PUSH BUTTON SWITCH	1
5	B5-010-11	• MAIN CASE RETAINING SCREW	4
6	B5-010-10	• WAND CIRCUIT BOARD	1
7	B5-010-13	• BATTERY CASE TOP	1
8	B5-010-07	• NECK PIECE	1
9	B5-010-09	• BULB CONNECTOR	1
10	B5-010-04	• STROBE BULB	1
11	B5-010-03	• PLASTIC COVER	1
12	B5-010-01-1	WAND ASSEMBLY	1
13	B5-010-21	• MAIN CASE (SET)	1
14	B5-010-22	• COVER, battery	1
15	B5-010-06-5	• SWITCH, push button	1
16	B5-010-22-2	• SCREW, main case retaining	3
17	B5-010-10	• WAND CIRCUIT BOARD	1
18	B5-010-22-1	• SPRING, battery retaining	1
19	B5-010-09	• CONNECTOR, bulb	1
20	B5-010-04	• STROBE BULB	1
21	B5-010-03	• PLASTIC COVER	1
NS	B5-010-02	DRAPE, finished	A/R
NS	B5-010-05	DRAPE, unfinished	A/R
22	B9-010-15	DIMMER CONTROL, optional, with ON-OFF switch	A/R
23	B9-010-15-1	• DIMMER (only)	1
24	B9-010-16-4	• INSERT, slider	1
25	B9-010-16-3	• CONTROL KNOB	1
26	B9-010-15-2	• ON/OFF SWITCH (only)	1
27	B9-010-24	SCREW, switch mounting, #6-32 x 1/2	A/R
28	B9-010-16	FACE PLATE, single dimmer	A/R
29	B9-010-23	SCREW, face plate (metric thread)	A/R
30	B5-011-83	BATTERY INDICATOR LED	1
	B9-010-19	WALL CONTROL ASSEMBLY, single, consists of: (1) B9-010-15, (1) B9-010-16, (2) B9-010-23	



LAMP HOUSING
TO LAMP HOUSING



STANDARD (DPST) WALL
SWITCH



OPTIONAL SKYTRON WALL DIMMER
CONTROL



SKYTRON

5000 36th Street S.E., Grand Rapids, MI 49512
1-800-SKYTRON 616-957-0500
(759-8766) FAX 616-957-5053